

What is claimed is:

1. A linear motor drive apparatus comprising:

a fixed element, which has a guide mechanism;

a movable element, which is guided by the guide mechanism and which can

- 5 move along a prescribed reference plane;

parallel rows of first magnets, which are mounted to the fixed element, and which are arrayed in parallel at both sides of the reference plane; and

parallel rows of second magnets, which are mounted to the movable element, and which are arrayed in parallel at both sides of the reference plane, wherein

- 10 the parallel rows of first magnets are plane-symmetry with respect to the reference plane, and

the movable element has, at a part thereof crossing the reference plane, a steel plate parallel to the reference plane, the steel plate having a narrowing configuration.

2. A linear motor drive apparatus according to claim 1, wherein the steel plate
15 has a triangular shape.

3. A linear motor drive apparatus according to claim 1, wherein the steel plate is provided so as to have planar symmetry with respect to both ends of the movable element along the direction of movement thereof.

4. A linear motor drive apparatus according to claim 1, wherein the row of first
20 magnets comprises electromagnets, and wherein the row of second magnets comprises permanent magnets.

5. A linear motor drive apparatus according to claim 1, wherein the row of first magnets comprises permanent magnets, and wherein the row of second magnets comprises electromagnets.

- 25 6. A linear motor drive apparatus according to claim 1, wherein the guide mechanism is a pair of V-shaped grooves that have planar symmetry with respect to the reference plane.